

3.0 State Plan of Flood Control Facilities

This section describes SPFC facilities according to the function they perform, which is to manage snowmelt and stormwater runoff. Therefore, the facility descriptions are presented geographically by river reach, generally bounded by points where significant inflows or outflows occur.

The facility descriptions are scaled to the major facilities – levees, drainage pumping plants, weirs or other water control structures, drop structures, dams/reservoirs, other major channel improvements, and mitigation areas. Smaller components of these facilities and associated features, such as transportation relocations, stream gages, pipes passing through levees, or bridges, are not included in this section, but can be found in unit-specific O&M manuals or the O&M summary data table included on the reference DVD that accompanies this report.

The facilities are generally described in an upstream-to-downstream direction. However, since the flood management system is not linear, but instead a network of tributary and distributary channels, some deviation from the upstream-to-downstream convention is necessary. Levees referred to as being on the left bank or right bank of a river reach are based on their position when looking downstream.

Levee data for the SPFC are mostly consistent with the California Levee Database (CLD). Because CLD information is continually being revised to reflect the best available information, future updates to this SPFC Descriptive Document will reflect changes since the prior draft or update.

3.1 Summary

This subsection presents a general summary of the SPFC facilities that are described in more detail in Sections 3.2 and 3.3. With the exception of the backwater effect of flows mingling in the Delta, SPFC facilities on the Sacramento River and tributaries operate independently from SPFC facilities on the San Joaquin River and tributaries. The Sacramento River system carries flood flows that are about 10 times greater in volume than those in the San Joaquin River system.

Both the Sacramento and San Joaquin rivers use bypass systems to carry a large portion of floodwater. Together, the rivers and their tributaries have approximately 1,600 miles of SPFC levees. Mostly non-SPFC reservoirs in each system have flood reservation storage that significantly helps attenuate flows and aids in operation of downstream SPFC facilities.

3.1.1 Sacramento River Basin

The flood management system along the Sacramento River and tributaries manages flood flows originating from an area of approximately 27,000 square miles. Major tributaries to the Sacramento River include the Feather, Yuba, Bear, and American rivers, which discharge to the Sacramento River from the east. Three smaller upstream SPFC projects on streams tributary to the Sacramento River are shown in Figure 3-1 (North Fork Feather River near Chester, Middle Creek, and Adin projects). Figure 3-2 shows an overview of SPFC facilities in the Sacramento River Basin. The design flood flow capacities of the various stream reaches are also shown in Figure 3-2 and listed in Table 3-1.



The design flood flow capacity of the Sacramento River upstream from Sacramento Weir is 107,000 cfs

The design flood flow capacities shown in Table 3-1 are from unit-specific O&M manuals and from SRFCP levee and channel profiles dated March 1957, revised August 1969 (1957 Revised Profile Drawings) (USACE, 1957a) (see Section 6.6.1); in some cases, these capacities are inconsistent within a given river reach. Where design flood flow capacities

are inconsistent between the O&M manuals and 1957 Revised Profile Drawings, DWR operates SPFC facilities in the Sacramento River Basin based on the 1957 Revised Profile Drawings rather than on design flood flows from the O&M manuals. These design flood flow capacities are based on hydraulic analyses conducted before 1960, generally to establish the minimum standard for top-of-levee elevations during the design phase. These capacities do not account for geotechnical or geomorphic conditions that may result in current flood flow capacities being less than design flood flow capacities. In some cases, State, federal, or local agencies may have conducted more recent hydraulic studies that estimate higher or lower flow capacities than those shown in the table – see the FCSSR (under development) for updated estimates of current actual flood flow capacities and the CVFPP for resolution of these inconsistencies.

Where the 1957 Revised Profile Drawings did not include design flood flow capacities and the capacities from O&M manuals are different for the left-bank levee and right-bank levee along a particular reach, the lowest capacity is shown in Figure 3-2. Detailed maps of the area covered in Figure 3-2 are included in Attachment A.

Along tributary streams to the Sacramento River upstream from Ord Ferry, most SPFC facilities were constructed primarily to help reduce local flooding, and have no association with the continuous flood management system that stretches from Ord Ferry to Collinsville in the Delta.

Flow in the Sacramento River is reduced by spilling floodwater into bypass areas through historic overflow areas and SPFC weirs. The first spill from the Sacramento River occurs just upstream from the start of the levee system at Ord Ferry. Floodwater leaves the river through three designated overflow areas and flows into the Butte Basin, which drains into the Sutter Bypass. Additionally, floodwater spills into bypasses over five SPFC weirs. Because of these spills to the bypass areas, the design flow capacity of the Sacramento River generally decreases in a downstream direction except where tributary inflow increases river flow. For example, the design capacity of the Sacramento River upstream from the leveed system is about 260,000 cubic feet per second (cfs). Downstream from the Tisdale Weir, the design capacity of the river is only 30,000 cfs.

The comprehensive system of SPFC levees, river channels, overflow weirs, drainage pumping plants, and flood bypass channels is the largest flood management system in California. This system includes the following major SPFC facilities:

- About 440 miles of river, canal, and stream channels (including an enlarged channel of the Sacramento River from Cache Slough to Collinsville)
- About 1,000 miles of levees (along the Sacramento River channel, Sutter and Yolo basins, and Feather, Yuba, Bear, and American rivers)
- Four relief bypasses (Sutter, Tisdale, Sacramento, and Yolo bypasses)
- Knights Landing Ridge Cut, connecting the Colusa Basin to the Yolo Bypass
- Five major weirs (Sacramento Weir, built in 1916; Fremont Weir, built in 1924; and Moulton, Tisdale, and Colusa weirs, built in 1932 and 1933)
- Two flood relief structures and one natural overflow area (M&T Flood Relief Structure, Three B's Natural Overflow Area, and Goose Lake Flood Relief Structure)



Fremont Weir (photo courtesy of NOAA)

- Two sets of outfall gates
- Five major drainage pumping plants
- Cache Creek Settling Basin, maintaining the flood conveyance integrity of the Yolo Bypass
- Numerous appurtenant structures such as minor weirs and control structures, bridges, and gaging stations

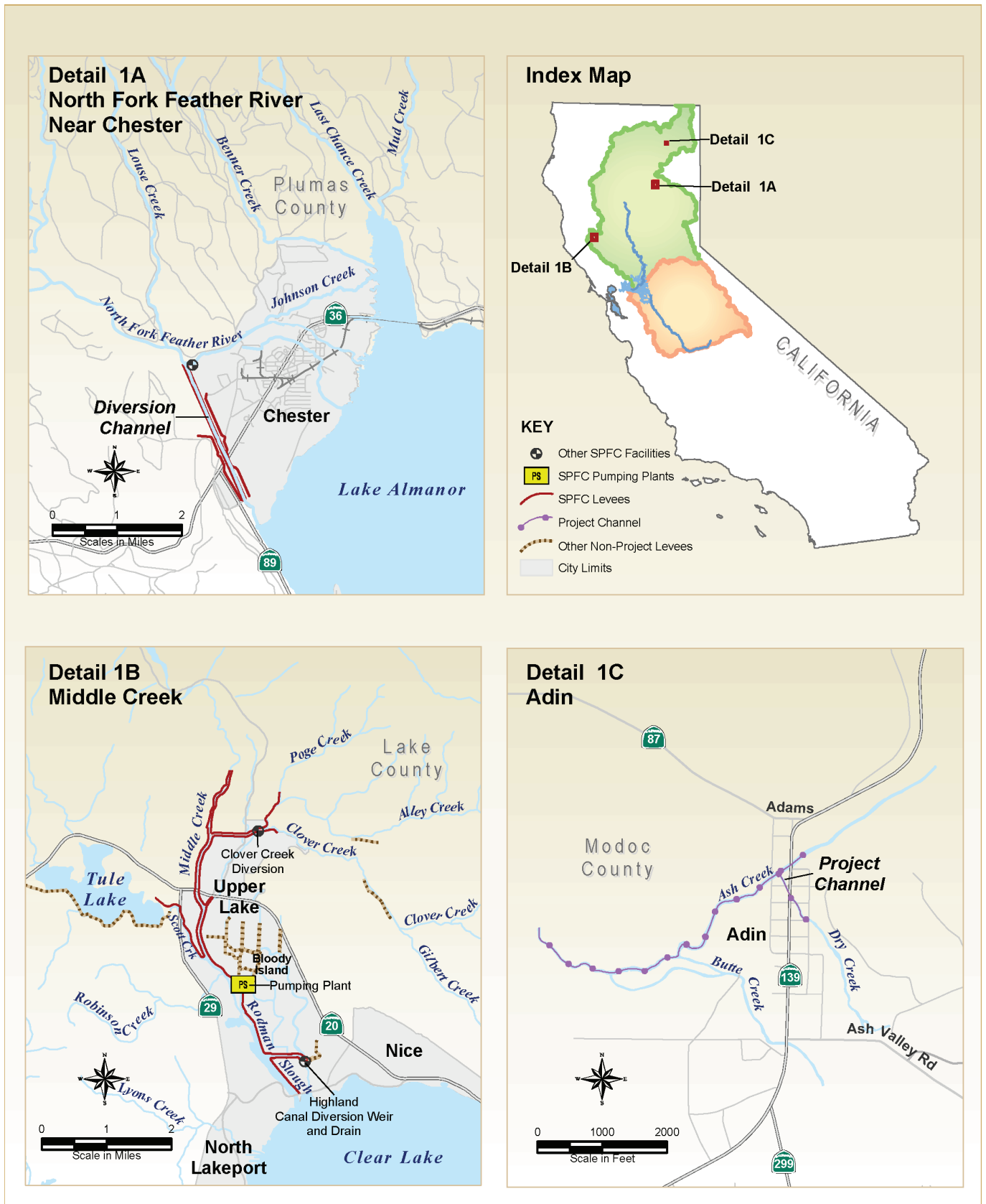


Figure 3-1. State Plan of Flood Control Facilities Within the Sacramento River Basin near Chester, Middle Creek, and Adin

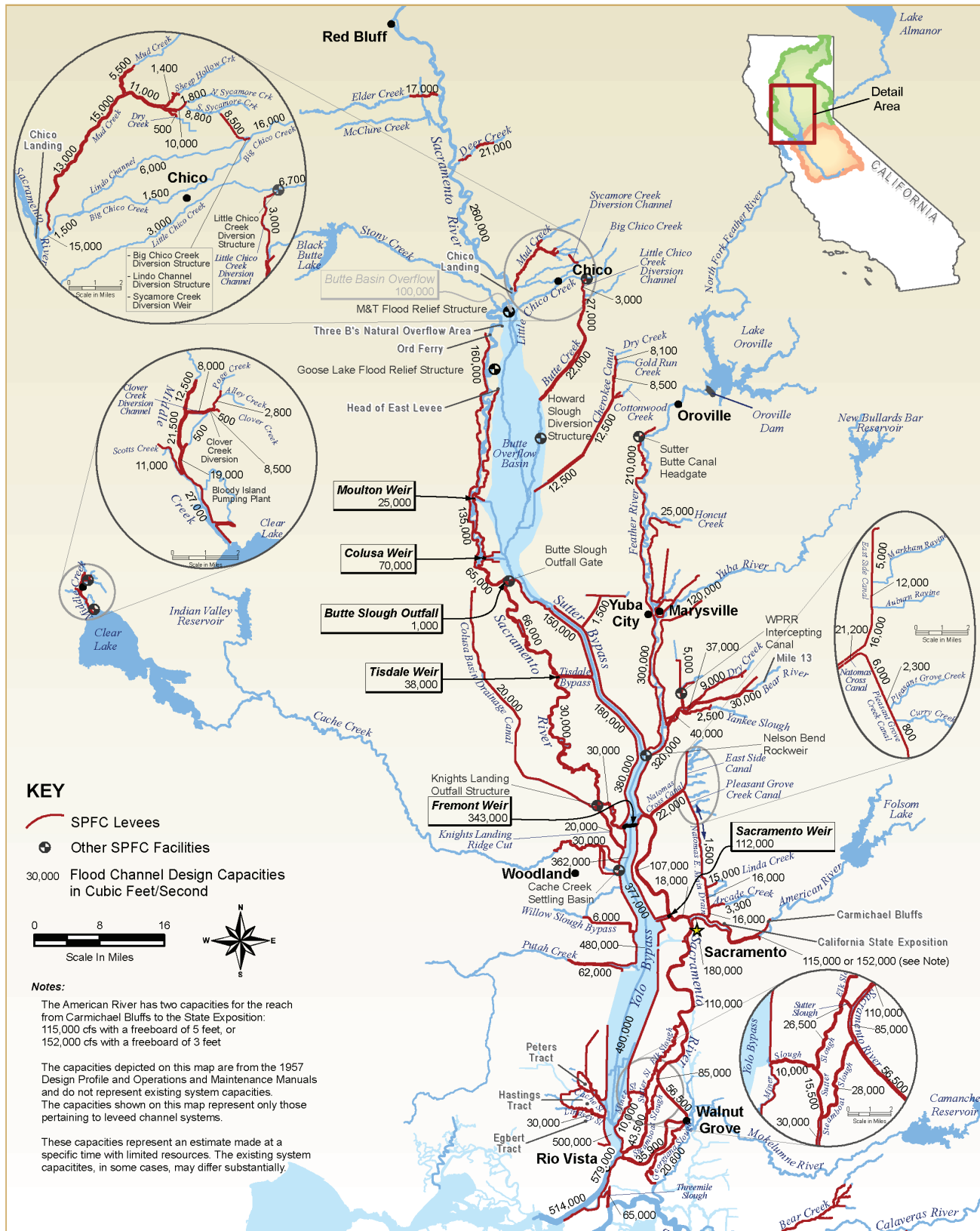


Figure 3-2. Design Flood Flow Capacities Within the Sacramento River, Bypasses, and Major Tributaries and Distributaries in the Sacramento River Basin

Table 3-1. Design Capacities by Reach in Sacramento River Basin

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manuals		Design Capacity (cfs) from 1957 Revised Profile Drawings (basis of State operations)
	From	To	Left Bank	Right Bank	
RED BLUFF TO CHICO LANDING					
Sacramento River					
Deer Creek to Chico Landing			260,000 cfs from Senate Document No. 23		
Tributaries to Sacramento River					
Elder Creek	6.00	0.00	17,000	17,000	17,000
Deer Creek	7.40	0.00	21,000	21,000	21,000
CHICO LANDING TO COLUSA WEIR					
Sacramento River					
Chico Landing to Head of East Levee	175.00	166.00	160,000	160,000	160,000
East Levee Head to Moulton Weir	166.00	148.25	160,000	160,000	160,000
Moulton Weir to Colusa Weir	148.25	138.00	110,000	135,000	135,000
Tributaries to Sacramento River					
Mud Creek and Big Chico Creek					
Mud Creek – End of Levees to Sycamore Creek	8.2 ²	6.8 ²	5,500	5,500	No Data
Mud Creek – Sycamore Creek to SPRR	6.8 ²	4.3 ²	15,000	15,000	15,000
Mud Creek – SPRR to Big Chico Creek	4.3 ²	0	13,000	13,000	13,000 to 15,000
Big Chico Creek – Mud Creek to Sacramento River	0.2 ²	0	15,000	15,000	15,000
Distributaries from Sacramento River					
Overflow to Butte Basin	191	175	100,000 cfs from Senate Document No. 23		
Moulton Weir	158.5	158.5	25,000	25,000	25,000
Colusa Weir	146 ²	146 ²	70,000	70,000	70,000
COLUSA WEIR TO FREMONT WEIR					
Sacramento River					
Colusa Weir to Butte Slough	138.00	130.00	48,000	48,000	65,000
Butte Slough to Tisdale Weir	130.00	119.50	66,000	48,000	66,000
Tisdale Weir to Knights Landing	119.50	90.00	30,000	30,000	30,000
Knights Landing to Fremont Weir	90.00	85.00	30,000	30,000	30,000
Tributaries to Sacramento River					
Butte Slough Outfall	138 ²	138 ²	3,500	3,500	1,000

Table 3-1. Design Capacities by Reach in Sacramento River Basin (contd.)

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manuals		Design Capacity (cfs) from 1957 Revised Profile Drawings (basis of State operations)
	From	To	Left Bank	Right Bank	
Knights Landing Outfall	90 ²	90 ²	No Data	No Data	No Data
<i>Distributaries from Sacramento River</i>					
Tisdale Weir and Bypass	119 ²	119 ²	38,000	38,000	38,000
Fremont Weir	85 ²	82 ²	343,000	343,000	343,000
<i>Sutter Bypass</i>					
Butte Slough to Wadsworth Canal	93 ²	83.00	178,000	178,000	150,000
Wadsworth Canal to Tisdale Bypass	83.00	77.80	178,000	178,000	155,000
Tisdale Bypass to Feather River	77.80	67.00	216,500	216,500	180,000
Feather River to Verona	67.00	59.00	416,500	416,500	380,000
<i>Tributaries to Sutter Bypass</i>					
<i>Butte Creek</i>					
Little Chico Creek Diversion Channel to Midway	15.3 ²	8 ²	27,000	27,000	27,000
Midway to 1.6 Miles Downstream from Aguas Frias Road	8 ²	0	22,000	22,000	22,000
<i>Cherokee Canal</i>					
Dry Creek to Gold Run Creek at Nelson Road	21.7 ²	20.2 ²	N/A	8,100	No Data
Gold Run Creek at Nelson Road to Cottonwood Creek at Western Canal	20.2 ²	15.8 ²	8,500	8,500	No Data
Cottonwood Creek at Western Canal to RD 833 Canal Entrance at Afton Road	15.8 ²	7.9 ²	11,500	11,500	12,500
RD 833 Canal Entrance at Afton Road to Lower Butte Basin About 1 Mile Downstream from Colusa-Gridley Road	7.9 ²	0	12,500	12,500	12,500
Wadsworth Canal	5.00	0.50	1,500	1,500	1,500
<i>Feather River</i>					
Oroville to Mouth of Yuba River	50.85	27.40	210,000	210,000	210,000
Mouth of Yuba River to Bear River	27.40	12.00	300,000	300,000	300,000
Bear River to Yolo bypass	12.00	7.60	320,000	320,000	320,000
<i>Tributaries to Feather River</i>					
Honcut Creek	4.50 ²	0.00 ²	5,000	5,000	25,000
Yuba River	5.00	0.50	120,000	120,000	120,000
<i>Bear River</i>					
River Mile 13 to Dry Creek	13.00 ²	6.00 ²	30,000	30,000	30,000
Dry Creek to WPRR	6.00 ²	4.70 ²	37,000	37,000	37,000
WPRR to Feather River	4.70 ²	0.00 ²	40,000	40,000	40,000

Table 3-1. Design Capacities by Reach in Sacramento River Basin (contd.)

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manuals		Design Capacity (cfs) from 1957 Revised Profile Drawings (basis of State operations)
	From	To	Left Bank	Right Bank	
Tributaries to Bear River					
WPRR Interceptor Channel	6.30 ²	0.00 ²	10,000	10,000	10,000
South Dry Creek	1.50 ²	0.00 ²	7,000	7,000	9,000
Yankee Slough	4.00 ²	0.00 ²	2,500	2,500	2,500
FREMONT WEIR TO AMERICAN RIVER					
Sacramento River					
Fremont Weir to Sacramento Weir	85.00	63.90	107,000	107,000	107,000
Sacramento Weir to American River	63.40	51.70	110,000	110,000	18,000
Tributaries to Sacramento River					
Natomas Cross Canal	4.7	0.1	22,000	22,000	22,000
Tributaries to Natomas Cross Canal					
East Side Canal					
WPRR to Markham Ravine	No Data	No Data	N/A	5,000	5,000
Markham Ravine to Auburn Ravine	No Data	No Data	N/A	12,000	12,000
Auburn Ravine to Natomas Cross Canal	No Data	No Data	N/A	16,000	16,000
Pleasant Grove Creek Canal					
Sankey Road to Keys Road	No Data	No Data	900	900	800
Keys Road to Pleasant Grove Creek	No Data	No Data	2,700	2,700	2,300
Pleasant Grove Creek to Natomas Cross Canal	No Data	No Data	7,000	7,000	6,000
American River					
Carmichael to State Fairgrounds (left bank)	10.00 ²	3.00 ²	115,000 to 152,000 ³	N/A	115,000 to 152,000 ³
Mayhew to State Fairgrounds (right bank)	13.00 ²	3.00 ²	N/A	115,000 to 152,000 ³	115,000 to 152,000 ³
State Fairgrounds to Sacramento River	3.00 ²	0.00	180,000	180,000	180,000
Tributaries to American River					
Natomas East Main Drainage Canal					
Sankey Road to Dry (Linda) Creek	13.00 ²	4.00 ²	N/A	1,100	1,500
Dry (Linda) Creek to Arcade Creek	4.00 ²	2.00 ²	12,600 to 12,900	12,600 to 12,900	16,300
Arcade Creek to American River	2.00 ²	0.00	16,000 to 16,300	16,000 to 16,300	16,000 to 16,300

Table 3-1. Design Capacities by Reach in Sacramento River Basin (contd.)

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manuals		Design Capac-ity (cfs) from 1957 Revised Profile Drawings (basis of State operations)
	From	To	Left Bank	Right Bank	
Tributaries to Natomas East Main Drainage Canal					
Dry Creek (previously, Linda Creek)	1.30 ²	0.00	15,000	N/A	15,000
Arcade Creek	2.00 ²	0.00	3,300	3,300	3,300
Distributaries from Sacramento River					
Sacramento Weir and Bypass	45.30	45.30	112,000	112,000	112,000
Yolo Bypass					
Fremont Weir to Knight's Landing Ridge Cut	57 ²	54 ²	343,000	343,000	343,000
Knight's Landing Ridge Cut to Cache Creek	54 ²	51.8	362,000	362,000	362,000
Cache Creek to Sacramento Weir	51.8	45.3	377,000	377,000	377,000
Sacramento Weir to Putah Creek	45.30	39.5	480,000	480,000	480,000
Putah Creek to Miner Slough	39.5	19 ²	490,000	490,000	490,000
Miner Slough to Cache Slough	No Data	No Data	490,000	490,000	500,000
Cache Slough to Sacramento River	No Data	0.00	490,000	490,000	500,000
Tributaries to Yolo Bypass					
Knight's Landing Ridge Cut	2.6	0	20,000	20,000	20,000
Cache Creek	12.7	0	30,000	30,000	30,000
Willow Slough Bypass	No Data	0	6,000	6,000	6,000
Putah Creek	9.7	0	40,000	40,000	62,000
Miner Slough	1.68	0	10,000	10,000	10,000
Cache Slough and Lindsey Slough	No Data	0	43,500	43,500	30,000
AMERICAN RIVER TO COLLINSVILLE					
Sacramento River					
American River to Elk Slough	51.6	42.3	110,000	110,000	110,000
Elk Slough to Sutter Slough	42.1	34.3	110,000	110,000	110,000
Sutter Slough to Steamboat Slough	34.1	32.7	84,500	84,500	85,000
Steamboat Slough to Head of Georgiana Slough	32.5	26.75	56,500	56,500	56,500
Georgiana Slough to Yolo Bypass Junction	26.5	14.75	35,900	35,900	35,900
Yolo Bypass to 3-Mile Slough	14.62	9.75	579,000	579,000	579,000
3-Mile Slough to Collinsville	9.5	0	514,000	514,000	514,000
Distributaries from Sacramento River					
Sutter Slough – Sacramento River to Miner	No Data	0	25,500	25,500	26,500
Sutter Slough – Miner to Steamboat	6.55 ²	No Data	15,500	15,500	15,500
Steamboat Slough – Sac River to Sutter Slough	10	7	28,000	28,000	28,000
Steamboat Slough – Sutter Slough to Sac River	7	0	43,500	43,500	43,500

Table 3-1. Design Capacities by Reach in Sacramento River Basin (contd.)

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manuals		Design Capacity (cfs) from 1957 Revised Profile Drawings (basis of State operations)
	From	To	Left Bank	Right Bank	
Georgiana Slough	10	0	20,600	20,600	20,600
3-Mile Slough	No Data	0	65,000	65,000	65,000

Source: 1957 Revised Profile Drawings (USACE, 1957a)

Notes:

¹ Sequential river reaches were not necessarily designed as a system. Therefore, the capacities in the table do not add up. In some cases, left- and right-bank levees along the same reach may have different design capacities. Elk Slough design capacity is 0 cfs, based on O&M manuals, and is not listed in the table.

² The river mile was estimated at this location.

³ The capacity is 115,000 cfs at 5 feet of freeboard and 152,000 cfs at 3 feet of freeboard.

Key:

cfs = cubic feet per second

N/A = not applicable

No. = number

No Data = No Data currently presented

O&M = operations and maintenance

RD = Reclamation District

SPRR = Southern Pacific Railroad

State = State of California

WPRR = Western Pacific Railroad

3.1.2 San Joaquin River Basin

The flood management system along the San Joaquin River is intended to manage flood flows originating from an area of approximately 16,700 square miles in the Sierra Nevada, Central Valley, and Coastal Range in Central California. Major tributaries to the San Joaquin River include the Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, and Fresno rivers, which discharge to the San Joaquin River from the east. In addition, during flood release events from Pine Flat Reservoir, about half of Kings River flows are diverted north through the James Bypass into the San Joaquin River.

Unlike on the Sacramento River, where SPFC levees are continuous from Ord Ferry to the Delta, San Joaquin River SPFC levees are intermittent from near River Mile 225 to the Delta. The Chowchilla, Eastside, and Mariposa bypasses are the main SPFC facilities for the upstream portion of the San Joaquin River system. For portions of the system, these bypasses are the only SPFC facilities, and the San Joaquin River itself is not part of the SPFC. The bypass system ends upstream from the Merced River.

Figure 3-3 shows an overview of SPFC facilities in the San Joaquin River Basin. The design flood flow capacities of the various stream reaches are shown in Figure 3-3 and listed in Table 3-2. Where available, DWR operates SPFC facilities in the San Joaquin River Basin based on design flood flows reported in *Design Memorandum No. 1, San Joaquin River Levees, Lower San Joaquin River and Tributaries Project, California General Design* (USACE, 1955b) associated with levee profiles dated December 1955 (1955 Profile) (USACE, 1955a) (see Section 6.2.2) rather than on design flood flows from the O&M manuals.

Where the design flood flow capacities from O&M manuals were different for the left-bank levee and right-bank levee along a particular reach, the lowest design flood flow capacity is shown in Figure 3-3. Detailed maps of the area covered in Figure 3-3 are included in Attachment A. Similar to the discussion for Table 3-1 in Section 3.1.1, Table 3-2 shows design flood flow capacities used to set minimum levee height, without consideration of geotechnical or geomorphic conditions that may result in lower current flood flow capacities. See the FCSSR (under development) for updated estimates of current



Downstream view of the San Joaquin River at Sand Slough Control Structure

actual flood flow capacities, and the CVFPP for resolution of these inconsistencies.

Major SPFC facilities along the San Joaquin River and tributaries include the following:

- Chowchilla Bypass (and levees), which begins at the San Joaquin River downstream from Gravelly Ford, diverts San Joaquin River flows, and discharges the flows into the Eastside Bypass
- Eastside Bypass (and levees), which begins at the Fresno River, collects drainage from the east, and discharges to the San Joaquin River between Fremont Ford and Bear Creek
- Mariposa Bypass, which begins at the Eastside Bypass and discharges to the San Joaquin River (and levees)
- Approximately 99 miles of levees along the San Joaquin River
- Approximately 135 miles of levees along San Joaquin River tributaries and distributaries
- Six instream control structures (Chowchilla Bypass Control Structure, San Joaquin River Control Structure, Mariposa Bypass Control Structure, Eastside Bypass Control Structure, Sand Slough Control Structure, and San Joaquin River Structure)
- Two major pumping plants

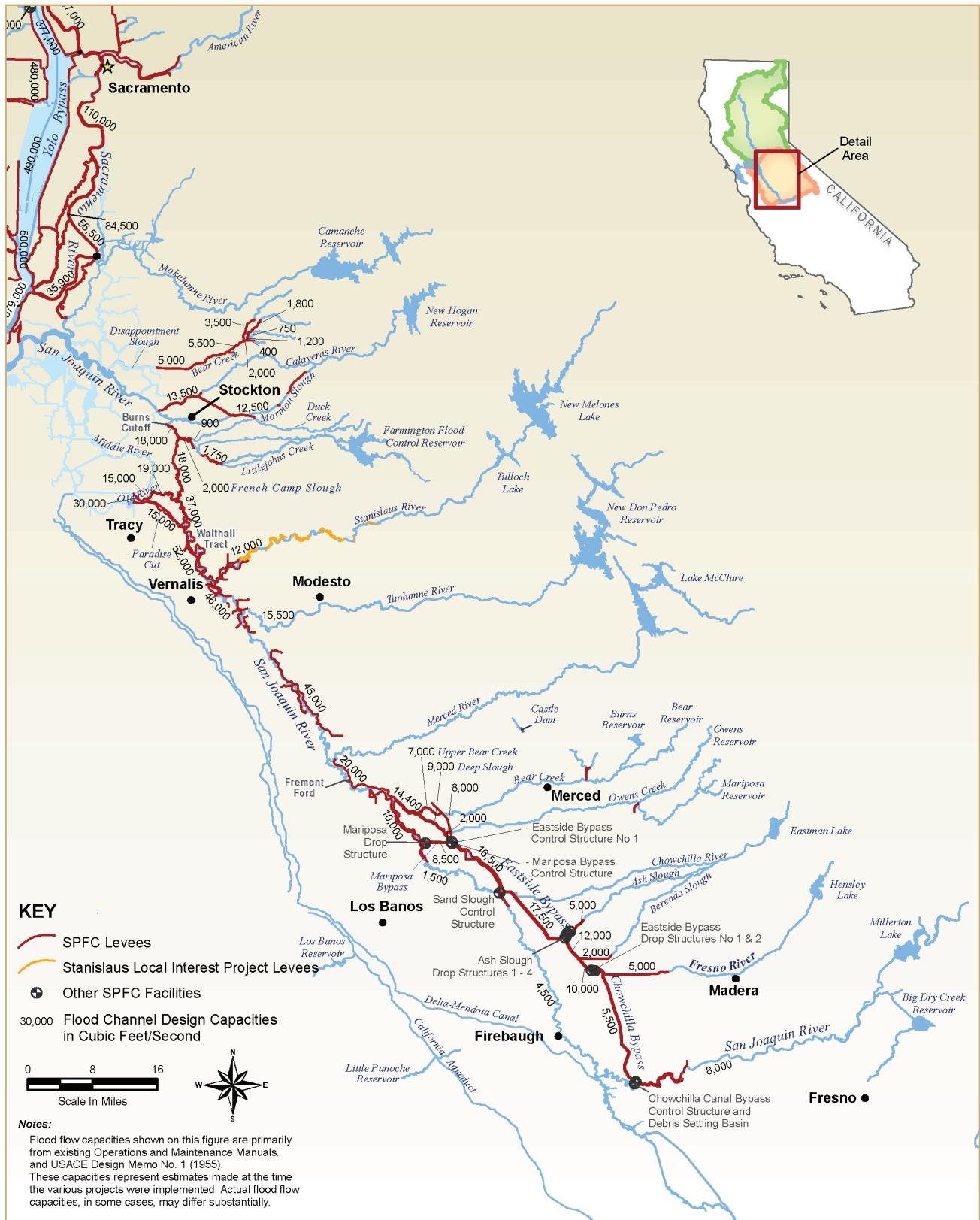


Figure 3-3. Design Flood Flow Capacities Within the San Joaquin River, Bypasses, and Major Tributaries and Distributaries in the San Joaquin River Basin

Table 3-2. Design Capacities by Reach in San Joaquin River Basin

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manual ²		Design Capacity (cfs) from Design Memo No. 1, 1955 (basis of State Operations)
	From	To	Left Bank	Right Bank	
FRIANT DAM TO CHOWCHILLA BYPASS ³					
San Joaquin River	224.66	214.03	8,000	8,000	No Data
CHOWCHILLA BYPASS TO SAND SLOUGH CONTROL STRUCTURE					
San Joaquin River	170 ⁴	166.44	4,500	4,500	No Data
Distributaries from San Joaquin River					
Chowchilla Bypass	32.04	15.85	5,500	5,500	No Data
Eastside Bypass					
Fresno River to Berenda Slough	15.85	13.59	10,000	10,000	No Data
Berenda Slough to Ash Slough	13.59	10.48	12,000	12,000	No Data
Ash Slough to Sand Slough	10.48	0.00	17,500	17,500	No Data
Tributaries to Eastside Bypass					
Fresno River	8.36	0.00	5,000	5,000	No Data
Berenda Slough	4.28	0.00	2,000	2,000	No Data
Ash Slough	4.52	0.00	5,000	5,000	No Data
SAND SLOUGH CONTROL STRUCTURE TO MERCED RIVER					
San Joaquin River					
Control Structure to Mariposa Bypass	149.89	145.15	1,500	1,500	No Data
Mariposa Bypass to Eastside Bypass	145.15	133.80	10,000	10,000	No Data
Eastside Bypass to Merced River	133.80	116.66	22,000	22,000	20,000
Tributaries to San Joaquin River					
Mariposa Bypass	4.23	0.00	8,500	8,500	No Data
Eastside Bypass					
Control Structure to Mariposa Bypass	8.96	16 ³	16,500	16,500	No Data
Mariposa Bypass to Owens Creek	8.96	5 ³	8,000	8,000	No Data
Owens Creek to Bear Creek	5 ³	1 ³	9,000	9,000	No Data
Bear Creek to San Joaquin River	1 ³	0.00	14,400	14,400	No Data
Tributaries to Eastside Bypass					
Owens Creek	0.98	0.00	No Data	No Data	No Data
Deep Slough	6.66	0.00	9,000	9,000	No Data
Upper Bear Creek	7.98	4.25	7,000	7,000	No Data
Bear Creek	4.25	0.00	14,400	14,400	No Data

Table 3-2. Design Capacities by Reach in San Joaquin River Basin (contd.)

River Reach¹	River Miles		Design Capacity (cfs) from O&M Manual²		Design Capacity (cfs) from Design Memo No. 1, 1955 (basis of State Operations)
	From	To	Left Bank	Right Bank	
MERCED RIVER TO STANISLAUS RIVER					
San Joaquin River					
Merced River to Tuolumne River	110.90	81.50	45,000	45,000	45,000
Tuolumne River to Stanislaus River	81.50	72.60	46,000	46,000	46,000
Tributaries to San Joaquin River					
Tuolumne River	0.60	0.00	15,000	15,000	15,000
Stanislaus River	11.90	0.00	12,000	12,000	12,000
STANISLAUS RIVER TO BURNS CUTOFF					
San Joaquin River					
Stanislaus River to Paradise Cut	72.60	58.30	52,000	52,000	52,000
Paradise Cut to Old River	58.30	53.30	37,000	37,000	37,000
Old River to Burns Cutoff	53.30	40.60	18,000	18,000	No Data
Tributaries to San Joaquin River					
French Camp Slough	6.40	0.00	3,000	2,000	No Data
Tributaries to French Camp Slough					
Littlejohns Creek	1.00	0.00	1,750	1,750	No Data
Duck Creek	0.90	0.00	900	900	No Data
Distributaries from San Joaquin River					
Paradise Cut – San Joaquin River to Old River	0.00	7.4 or 5.9³	15,000	15,000	15,000
Old River – Downstream from Paradise Cut	5.9	8.2	30,000	30,000	No Data
Old River – San Joaquin to Middle River	No Data	No Data	19,000	19,000	No Data
Old River – Middle River to Paradise Cut	No Data	No Data	19,000	15,000	No Data
Old River/Salmon Slough – Paradise Cut to Grant Line Canal	No Data	No Data	N/A	30,000	No Data
BURNS CUTOFF TO DISAPPOINTMENT SLOUGH					
Tributaries to San Joaquin River					
Calaveras River	5.80	0.00	13,500	13,500	No Data
Tributaries to Calaveras River					
Mormon Slough	8.40	6.20	12,500	12,500	No Data
Bear Creek – Disappointment Slough to Mosher Creek	No Data	No Data	5,500	5,500	No Data
Bear Creek – Mosher Creek to Paddy Creek	No Data	No Data	5,000	5,000	No Data
Bear Creek – upstream from Paddy Creek	No Data	No Data	3,500	3,500	No Data

Table 3-2. Design Capacities by Reach in San Joaquin River Basin (contd.)

River Reach ¹	River Miles		Design Capacity (cfs) from O&M Manual ²		Design Capacity (cfs) from Design Memo No. 1, 1955 (basis of State Operations)
	From	To	Left Bank	Right Bank	
Tributaries to Bear Creek					
Paddy Creek – Bear Creek to North Paddy Creek	No Data	No Data	2,000	2,000	No Data
Paddy Creek – Upstream from North Paddy Creek	No Data	No Data	400	400	No Data
Middle Paddy Creek	No Data	No Data	750	750	No Data
North Paddy Creek – Paddy Creek to Middle Paddy Creek	No Data	No Data	1,800	1,800	No Data
North Paddy Creek – Upstream from Middle Paddy Creek	No Data	No Data	1,200	1,200	No Data

Notes:

¹ Sequential river reaches were not necessarily designed as a system. Therefore, the capacities in the table do not add up. In some cases, left- and right-bank levees along the same reach may have different design capacities.

² Where available, the State operates SPFC facilities in the San Joaquin River Basin based on the 1955 profile rather than on design flows from the O&M manuals.

³ This capacity only applies to the leveed reach upstream from the Chowchilla Bypass.

⁴ The river mile was estimated at this location.

Key:

cfs = cubic feet per second

N/A = not applicable

No Data = No Data currently presented

O&M = operations and maintenance

SPFC = State Plan of Flood Control

3.2 SPFC Facilities in the Sacramento River Basin

This section describes SPFC facilities in the Sacramento River Basin by reach. Because of the numerous locations of tributary and distributary flow, the Feather River watershed, American River watershed, Sutter Bypass watershed, Yolo Bypass watershed, and Sacramento River watershed are described separately. The description for the Sacramento River watershed identifies where the Feather River, American River, Sutter Bypass, and Yolo Bypass are either tributary or distributary to the Sacramento River.

The Standard O&M Manual for the SRFCP specifies general levee dimensions that were used for the original project design. These dimensions include a general crown width of 20 feet, with side slopes of 2:1 on the waterside, and 3:1 on the landside. Exceptions to these dimensions are noted in the unit-specific O&M manuals and as-constructed dimensions provide an even better indication of how the levees were actually built.

Figure 3-4 is an index map of the Sacramento River Basin showing the five major watersheds, including SPFC facilities.

3.2.1 Feather River Watershed

The Feather River, a tributary to the Sacramento River, drains a major watershed in the Sierra Nevada and Cascade mountain ranges. Figure 3-5 shows SPFC facilities in the Feather River watershed.